

Review and commentary of key non-JVS-VL articles

More is not necessarily better

Adjunctive Intermittent Pneumatic Compression for Venous Thromboprophylaxis

Arabi YM, Al-Hameed F, Burns KEA, Mehta S, Alsolamy SJ, Alshahrani MS, et al. Saudi Critical Care Trials Group N Engl J Med 2019;380:1305-15.

Conclusions: In critically ill patients who were already receiving pharmacologic thromboprophylaxis, the use of intermittent pneumatic compression (IPC) did not significantly lower the incidence of deep venous thrombosis (DVT).

Summary: The PREVENT trial, an investigator-initiated study, was performed in 20 sites across Saudi Arabia, Canada, Australia, and India. More than 2000 critically ill patients who were on pharmacologic therapy for DVT prophylaxis were fairly equally randomized to receive or not receive adjunctive IPC. The IPC devices varies between knee and high thigh or foot-only pumps, for at least 18 hours/day. Twice weekly ultrasound scans were performed to detect new proximal lower extremity DVT. New DVTs were seen in 3.9% of IPC group and 4.2% of controls. A composite endpoint of venous thromboembolism (pulmonary embolism or any DVT) occurred in 10.4% and 9.4% of IPC group and controls, respectively.

Comments: If you have ever tried to wear one of these devices, you may find them to be uncomfortable and hot. They can cause skin blisters or even bruises from the foot pumps (which feel like a punch to the bottom of your foot every time they rapidly inflate). They are definitely not a relaxing leg massage. Additionally, in critically ill patients, they may contribute to limb ischemia in those who have lower extremity atherosclerosis or those who are on vasoconstrictive medications necessary for blood pressure and cardiac support.

Just say no to radiation in pregnancy

Pregnancy-Adapted YEARS Algorithm for Diagnosis of Suspected Pulmonary Embolism

van der Pol LM, Tromeur C, Bistervels IM, Ni Ainle F, van Bommel T, Bertoletti L, et al. Artemis Study Investigators N Engl J Med 2019;380:1139-49.

Conclusions: Pulmonary embolism (PE) remains a leading cause of death in pregnant women in the Western world. The use of a pregnancy-adapted algorithm in pregnant women with suspected PE was successful and safely avoided the ionizing radiation exposure from computed tomographic pulmonary angiography (CTA) in 32% to 65% of pregnant patients in their third to first trimesters, respectively.

Summary: This prospective multicenter multiyear study of pregnant patients with suspected PE screened for PE using three criteria from the YEARS algorithm. In addition to measuring D-dimer level, patients were assessed for clinical signs of deep venous thrombosis, hemoptysis, and PE as the most likely diagnosis. If all were negative and D-dimer low, PE was ruled out. Ultrasound compression testing was used on patients with clinical signs of deep venous thrombosis. If a clot was seen, anticoagulation therapy was initiated and no CTA was performed. CTA was only done on patients with a D-dimer of greater than 1000 ng/mL with no YEARS criteria or more than 500 ng/mL with one to three YEARS criteria. This algorithm avoided CTA in 65% of pregnant patients in the first trimester and 32% of those in their third trimester.

Comments: The fetus is most susceptible to the harmful effects of radiation exposure in the first trimester of pregnancy. Avoiding an unnecessary CTA by the use of an alternative, and accurate, decision-making algorithm seems intuitive and safe. I commend these and other authors who have studied combinations of clinical probability, laboratory testing, and ultrasound imaging for PE predictability in pregnant patients. We need a uniform strategy and guidelines to approach these vulnerable patients.

Sweet!!! A randomized, controlled trial to add to the vein ablation evidence

Randomized Clinical Trial of Endovenous Laser Ablation Versus Direct and Indirect Radiofrequency Ablation for the Treatment of Great Saphenous Varicose Veins

Hamann SAS, Timmer-de Mik L, Fritschy WM, Kuiters GRR, Nijsten TEC, van den Bos RR. Br J Surg 2019 May 16. doi: 10.1002/bjs.11187. [Epub ahead of print]

Conclusions: Endovenous ablation is the gold standard for treatment of chronic venous insufficiency secondary to axial venous incompetence. The two most common ablation modalities, laser (endovascular laser ablation [EVLA])

and radiofrequency ablation (RFA) have been shown to be efficacious. This study found that all endovenous interventions were effective in improving the clinical severity of varicose veins at 1 year despite differing rates of persistent vein occlusion.

Summary: A prospective, randomized, single-center study was performed to evaluate patient outcomes and venous occlusion rates after indirect RFA, direct RFA, and EVLA. An intent-to-treat analysis was performed of the 450 participants randomized to one of three treatment arms. Of note, about one-third of each group was class C2 and more than 60% C3 to C4. Venous clinical severity scores at 1 year showed similar improvements with all three modalities as did Aberdeen Varicose Vein Questionnaire quality of life measurements. Vein occlusion rates were better after indirect RFA and EVLA than direct RFA (radiofrequency-induced thermotherapy). Increased periprocedural pain as well as other adverse events was more common with EVLA, although the authors admit that a different wavelength device is preferred and associated with less pain.

Comments: My hat is off to this group for their high-quality contribution to the evidence supporting endovenous ablation for the treatment of chronic venous insufficiency. Although vein occlusion rates differed among treatments, the percentage perhaps influenced by the intent-to-treat analysis, the clinical severity scores were the same and showed improvement in patient-reported outcomes at 1 year.

Flavonoids: Fact or fiction

Therapeutic Approach to Chronic Venous Insufficiency - Clinical Benefits of Red-Vine-Leaf-Extract AS 195 (Antistax)



Stücker M, Rabe E, Meyer K, Ottillinger B, Schütt T. *Pharmazie* 2019;74:193-200.

Conclusions: Red vine leaf extract (AS 195) may have an important role in mitigation of symptoms or prevention of chronic venous insufficiency.

Summary: Orally administered extract of red vine leaf has been shown to have a protective effect on the venous intima as well as anti-inflammatory and prothrombotic inhibitory properties. This venoactive drug has been studied and recommended for two or more decades. AS 195 shows a statistically and clinically significant improvement over placebo in patient-reported symptoms. It is well-tolerated, safe, and does not have cross-medication interactions.

Comments: Plant-derived venotonic agents, specifically the more studied red vine leaf extract AS 195, may represent a reasonable adjunctive treatment option for patients with mild to moderate chronic venous insufficiency. The antioxidant properties may be of benefit as well. If safe and inexpensive, patients may benefit from more widespread use of this dietary supplement.

Go for the glue!!

Endovenous Cyanoacrylate Glue to Treat Varicose Veins and Chronic Venous Insufficiency-Experience Gained From Our First 100+ Truncal Venous Ablations in a Multi-Ethnic Asian Population Using the Medtronic VenaSeal Closure System



Tang TY, Rathnaweera HP, Kam JW, Chong TT, Choke EC, Tan YK. *Phlebology* 2019 Jan 28;268355519826008; DOI: 10.1177/0268355519826008. [Epub ahead of print]

Conclusions: Cyanoacrylate glue is safe and effective for the treatment of chronic venous insufficiency.

Summary: This single-center, observational study evaluated the outcomes of cyanoacrylate glue (VenaSeal) for the treatment of axial veins with insufficiency in 77 patients and 93 legs. Of note, almost 70% of patients had C4 to C6 disease. At 1 year, the great saphenous vein and small saphenous vein occlusion rates were 54 of 59 (91.5%) and 5 of 8 (62.5%), respectively. Despite the anatomic recurrences, there were no clinical symptomatic occurrences.

Comments: VenaSeal has been shown to be safe and efficacious for axial reflux in patients with chronic venous insufficiency. There have been some reports of delayed inflammation owing to glue with new recommendations for anti-histamines and pain medications. However, patients have had good clinical outcomes and glue has been shown to be a favorable treatment for chronic venous insufficiency. Long-term high-quality data are needed to justify the efficacy and reliability compared with other endovenous ablation methods.

Legs and pelvis – 50% of patients have combined insufficiency!! really!!

Incidence and Distribution of Lower Extremity Reflux in Patients With Pelvic Venous Insufficiency



Scotti N, Pappas K, Lakhanpal S, Gunnarsson C, Pappas PJ. *Phlebology* 2019 Apr 3;268355519840846; doi: 10.1177/0268355519840846. [Epub ahead of print].